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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

July 6, 1998

Mr. A. N. Richardson
WAG 8 Project Manager
Naval Reactors Idaho Branch Office
P.O. Box 2469
Idaho Falls, ID 83403-2499

Re: Comments on the Draft Record of Decision (ROD) for the Naval Reactors Facility, OU8-08 at INEEL

Dear Andy:

Enclosed are the Environmental Protection Agency's comments on the draft ROD for the Naval Reactors Facility at INEEL. If you would like to discuss any of these comments prior to our conference call on July 14, please contact me at (206) 553-7721.

Sincerely,

Keith A. Rose

Keith A. Rose
INEEL WAG Manager

Enclosures

cc: Bruce Olenick, NRF
Margie English, IDEQ

COMMENTS ON THE DRAFT RECORD OF DECISION FOR THE NAVAL REACTORS FACILITY AT INEEL

Reviewer: Keith Rose

1) Page 35, Table 5. Why is NRF-23 (Sewage Lagoons) a No Further Action site if the HQ=6.6 for the crop ingestion pathway for the future residential scenario?

2) Page 44, Ecological Risk Assessment, last paragraph. Why were exposure values calculated only for arsenic, lead, and mercury? Did any COCs at any sites have an HQ>1? If so, identify these sites and the COCs in a table.

3) Page 45, Hydrogeologic Study. Expand this section to include: 1) a summary of the results of groundwater modeling conducted for NRF, 2) an explanation of the extent of perched water under the NRF, 3) discussion of the extent of contamination in the perched water and its potential impact on the SRPA, and 4) a discussion of the fate and transport of tritium to the SRPA and its potential impact on water quality.

4) Page 48, Remedial Action Objectives. In the first paragraph, justify why the RAOs are based on a future residential scenario instead of a future industrial scenario. In the second paragraph after the bullets, justify why a 1E-4 risk is the appropriate threshold for implementing remedial actions at contaminated sites at NRF.

5) Page 49, Alterative 1. Add at the end of the second sentence, "beyond the projected DOE 100-year institutional control period."

6) Page 51, Alternative 2, second paragraph. Identify the specific types of long-term monitoring which would be conducted under Alternative 2 in addition to the monitoring to be conducted under Alternative 1. Also identify specific additional institutional controls which would be implemented under Alternative 2.

7) Page 52, Alternative 3. Identify the total volume of soil and debris which would be excavated under this alternative.

8) Page 54, Alternative 4. Identify the total volume of soil and debris which would be excavated under this alternative. In the next to last paragraph, "CPP" should be "INTEC (formerly ICPP)". The fifth sentence should read, "A decision on the proposed disposal facility is expected in 1999". Omit the rest of this sentence since the proposed INEEL soil repository would not be available until the year 2000 at the earliest. Omit the sentence which begins, "Part of the proposed facility may include a RCRA. . . ."

9) Page 55, second paragraph. In the first sentence, the reference to the proposed repository should read, "the proposed INEEL soil repository".

10) Page 64, Table 9. Cost should be in total 1997 dollars. Add a separate table which provides the capital, O&M, and total costs for each alternative in Net Present Value (NPV) dollars.

Responsiveness Summary

1) Comments 2, 4, and 23. These comments show concern about the design and performance of the cap for the preferred alternative. Section 8.2, Selected Remedy for Sites of Concern, should include minimum performance criteria for the cap which must be achieved to insure protection to human health and the environment by minimizing infiltration of water, preventing cap erosion, preventing burrowing and exposure of small animals, and providing adequate shielding for humans from radionuclides contained under the cap.

2) Response to Comment 10. EPA and DEQ have reviewed the Proposed Plan and have determined that it adequately describes all essential elements of a Proposed Plan including site characteristics, the nature and extent of contamination, site risks, remedial action objectives, description of remedial alternatives, and comparative analysis of alternatives. The presence of the agencies' logos on the Proposed Plan does not mean that the agencies have selected a remedy for NRF. The agencies will consider public comments received on the Proposed Plan prior to selecting a final remedy in the Record of Decision.

3) Response to Comment 12. What was the conclusion on potential liabilities of operating the ECF identified in the Final Environmental Impact Statement which is referenced?

4) Response to Comment 21. Explain why the inhalation pathway does not pose a significant risk for the transuranic elements. Further explain why the Cs-137 external exposure cleanup goal is much smaller than the Cs-137 ingestion goal. Identify Sr-90 as one of the radionuclides which readily bioaccumulates in plants, and therefore has a lower cleanup goal via that pathway.

5) Response to Comment 31. It is not clear why we have to excavate to a depth of 30 feet to implement Alternative 4. The maximum depth of excavation for Alternative 3 should be 10 feet below grade, not 14 feet.

COMMENTS ON THE DRAFT NRF ROD

Reviewer: Judy Schwarz

1) **General Comment**. The use of the term "No Further Action" is not correct when applied to sites where institutional controls are required to prevent an unacceptable exposure. If institutional controls are necessary as part of a remedial action, the correct term would be "Limited Action".

2) Page iv. The bullets at the bottom of this page should be copied on page 69, Selected Remedy for Sites of Concern.

3) Page 5. The reference to Figure 2 appears to be incorrect.

4) Page 13. NRF-38: Was anything added to the water in the steam system to prevent corrosion? NRF-61: This seems to be a limited action site since institutional controls are necessary.

5) Page 17, last paragraph. Specify what the term "risk-base screening levels" means and what exposure assumptions it is based on.

6) Page 20. Are the COPCs identified in paragraph 3 in the same location as the area identified as an area of significant contamination in paragraph 4?

7) Page 27. Provide further justification why NRF-43 NRF-66 are "No Action" sites.

8) Page 29. Better explain why NRF-83 is a "No Further Action" site. At the end of the "Site Characteristics" section, there should be a summary of groundwater data collected and groundwater modeling conducts on potential sources at NRF. Section 4.4, Hydrogeologic Study, should be moved up into the "Site Characteristics" section. Section 4.4 should be retitled, "Groundwater Risks" and summarize the risks to groundwater from NRF sources.

9) Page 30, Section 4.1.1. Need to explain critical assumptions used in the risk assessment including: future land use scenario, exposure parameters used, contaminant concentrations at the point of exposure, etc. The explanations given in this section to support the "No Action" decision for sites in Table 4 are not convincing and need to be better justified.

10) Page 38, Table 5. NRF-21A has N-nitrosodi-propylamine at a risk of 1E-5 for the 30 year residential scenario but a larger risk of 7E-4 for the 100 year residential scenario. Please correct.

11) Page 43, first complete paragraph. The discussion of eliminating various COCs (arsenic, antimony, mercury, etc.) through risk management decisions should not be included here but should be discussed at more length in another section prior to the risk assessment.
Last paragraph of section 4.1.2. Explain what is meant by "protective nature of present site

conditions". Sites identified here which require 100 years of institutional controls to be protective should not be called "No Action" sites.

12) Page 44, Cumulative Risk Assessment. Is it correct to eliminate soil ingestion and food crop ingestion pathways from the cumulative risk assessment since these pathways can occur at the same time as inhalation of dust, ingestion of groundwater, and direct exposure. Soil and crop ingestion, though not cumulative risks in themselves, could result in an unacceptable total risk if added to the other exposure pathways.

13) Page 49. At the end of the section on Remedial Action Objective, add a short discussion of the main ARARs that apply to remedial actions considered for NRF. Justify why remediation goals established for protection of human health are also protective of ecological receptors.

14) Pages 51-55, Alternatives 2-4. Identify the total cost and approximate time to implement each alternative at the end of the section describing that alternative.

15) Page 58, Compliance with ARARs. Why would storm water discharge requirements apply to Alternatives 1 and 2?

16) Page 59, Implementability. Address the difficulty of implementing each remedy from the perspective of disrupting operations of facilities which will remain in operation.

17) Page 61, Table 8. Don't use the RCRA term "Post-Closure Costs", instead use the term "Operations and Maintenance Costs" or something similar. Also identify annual O&M costs in these tables.

18) Page 64, Summary and Table 9. Eliminate Table 9 and revise the discussion in the text to summarize the conclusions of the comparative analysis in a narrative form. A table summarizing the comparative analysis is okay for the Proposed Plan but is not appropriate for the ROD.

19) Page 69, Selected Remedy. Need to add a discussion of why the selected remedy, Alternative 3, is the best remedy. Need to add a discussion of how excavation to remediation goals for Sr-90 and Cs-137 will also address all othe COPCs. Need to add performance standards for the cap. Need to copy in the bullets from the Declaration describing the components of the selected remedy. The details of implementing institutional controls, including frequency of monitoring the cover, maintenance of fences and cover, assessing effectiveness of controls during 5-year reviews, etc., need to be consistent with the requirement of EPA Region 10's guidance on institutional controls which will be issued soon.

Responsiveness Summary

1) Response to Comment 3. Include the description of possible dust suppression techniques in this response to the descriptions of Alternatives 3 and 4 in the text of the ROD.

2) Response to comment 9. Further explain the portion of this response which reads, "Nevertheless, the scenarios evaluated for the human health risk assessment conservatively

included flood-type conditions." The ROD should include a statement that the NRF is not located on the 100-year flood plain even in the absence of the dam.

3) Response to comment 13. The response says that the 5-year review on the sewage lagoons will include the review of newly acquired data from sampling performed at the sewage lagoon and groundwater sampling. Put this statement into the Selected Remedy section of the ROD.

4) Response to comment 24. Make sure that all monitoring techniques mentioned in this response are also identified in the Selected Remedy section of the ROD.

5) Response to comment 27, last sentence of first paragraph. Scenarios evaluated for NRF are not "standard EPA" scenarios. These scenarios are probable or likely scenarios for INEEL.

6) Response to comment 39. This response explains that some of the cost of the excavation costs associated with Alternative 3 were expenses that were part of NRF's planned future D&D activities. Include this explanation in the description of the selected remedy in the ROD.

COMMENTS ON NRF DRAFT ROD

Reviewer: Rick Poeten

Table 2, Table 3: Discharge summaries in units of curies are not meaningful without some associated information about the radionuclides released.

Section 3.2.1, last paragraph: The statement that Co-60 would not be expected in significant quantities in soil because of its half-life is misleading. The quantity that would be present today also depends on the initial activity. Table 5 clearly shows examples where Co-60 is a greater current risk than Cs-137. It is also the case that pCi for pCi, the Co-60 external radiation slope factors for Co-60 are more than 4 times greater than corresponding Cs-137 slope factors. It therefore takes a pCi/g of Co-60 more than ten years to decay to the point where its risk is lower than a pCi/g Cs-137.

In the same paragraph, the statement is made that tritium is not expected in soil since it behaves like water. This begs the question of where the tritium went. Discussion of groundwater impacts should be included.

Section 3.2.2.1: This is a No Further Action Site, but Table 5 shows current occupational risks greater than 4E-4. Shouldn't this be a Limited Action site with the current institutional controls limiting occupational exposure constituting the limited action?

Section 3.2.2.2, second paragraph: The curie content data (5.33 curies) should include information on the radionuclides involved. If exact amounts of each radionuclide were not known, what mix of radionuclides was assumed to calculate the decay to 0.33 curies by 1996?

Section 3.2.2.14, third paragraph: The reference to "risk-based levels" should be clarified. Does this mean risk-based screening levels? If so, what risk level was used (E-6, E-7)?

Table 4: I suggest changing the last column heading from "Reason for Risk" to "Qualitative Basis".

Section 4.4: Discussion of groundwater impacts should be expanded to include topics such as perched water status, contaminants which have reached the aquifer, risk impacts of tritium releases etc. Was a GW SCREEN run performed for tritium?

Section 5.1: Some discussion should be included as to why the upper end (1E-4) of the risk range was used for remedial action objectives, as opposed to some lower level.

Section 5.1, next to last paragraph: "maximum detectable concentrations" should be "maximum detected concentrations".

Sections 5.2.3 and 5.2.4: These sections and the associated cost estimates should include information on the volumes of soil to be excavated from each site.

Section 8.2: I question the need for excavation at some of the sites of concern in the selected remedy.

NRF-21A is already filled, and has moderate Cs-137 contamination at a depth of 14 feet. Why not a remedy consistent with its current "native soil cover" configuration?

NRF-80 shows no risk and small levels of short-lived Co-60 contamination at a depth of 6 feet. Previous D&D sampling showed up to 1600 pCi/g Co-60, but even this will decay to insignificant levels in 100 years. NRF-11 (drainfield) shows no risk, with minor Co-60 contamination at a depth of 8 feet. It is not clear to me that either one of these require excavation.

NRF-17 also shows no risk, but with a known leak below the existing concrete basin. This site has no groundwater impact and no surface pathway. Leaving the contamination under the existing concrete should be considered .

Page 99, Response to Comment 39, first paragraph: The last sentence in this paragraph appears to state that CERCLA is paying for D&D activities under this ROD. It is my understanding that CERCLA does not cover INEEL D&D, and this paragraph should be clarified.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

July 10, 1998

Reply To
Attn Of: ORC-158

MEMORANDUM

SUBJECT: Comments on INEEL OU 8-08 Draft ROD

FROM: Tod Gold

TO: Keith Rose

The following are my comments on the draft Record of Decision (ROD) for Operable Unit 8-08 (Naval Reactors Facility) dated May 28, 1998:

(1) Pages 51 and 53: In the description of the institutional controls for Alternative 2 (limited action) and Alternative 3 (limited excavation), I recommend adding the following paragraph that was used in the INEEL ROD for the Test Reactor Area:

> A description of the areas where access will be restricted, the specific controls (e.g., fences, signs) that will be used to ensure that access will be restricted, the types of activities that will be prohibited in certain areas (e.g., excavation), and the anticipated duration of such controls will be placed in the "INEEL Comprehensive Facility and Land Use Plan" maintained by the Office of Program Execution. DOE shall also provide the Bureau of Land Management the detailed description of the controls identified above. This information will be submitted to the EPA and IDHW once it has been placed in the INEEL Comprehensive Facility and Land Use Plan.

If, for whatever reason, the Naval Reactors Facility is not part of the INEEL Comprehensive Facility and Land Use Plan, it should be determined how notice of the institutional controls will be placed in the appropriate land use plan.

(2) Page 57 (next-to-last paragraph) and page 58 (last paragraph): These paragraphs state that all contaminants will be removed but also states that the long-term effectiveness will

depend on the enforcement of institutional controls and continued maintenance of the cover. Why are institutional controls and maintenance of a cover needed if all contaminants will be removed?

(3) Pages 59 and 73: An explanation should be provided why treatment is not practicable.

(4) Page 69: the description of the selection of alternative 3 should include institutional controls, including the reference to the INEEL Comprehensive Facility and Land Use Plan described in comment (1) above.